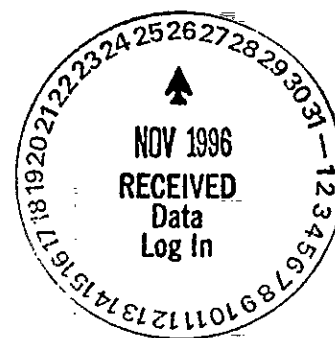




Lockheed Analytical Services

Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352



ANALYTICAL DATA REPORT

FOR

NITRATE, TOTAL URANIUM BY KPA,
STRONTIUM-90, TECHNETIUM-99, AND TRITIUM



LOG-IN NUMBER: L8229
QUOTATION NUMBER: Q400000-B
SAF NUMBER: B97-023
DOCUMENT FILE NUMBER: 1030596
BHI DOCUMENT FILE NO.: 411
SDG NUMBER: LK8229



BECHTEL HANFORD
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Sample Delivery Group, LK8229

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This package contains a total of 105 pages.

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Lockheed Analytical Services
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LOCKHEED MARTIN



November 25, 1996

Ms. Joan Kessner
Bechtel Hanford, Inc.
3350 George Washington Way
MISN B1-35
Richland, WA 99352

RE: Log-in No.: L8229
Quotation No.: Q400000-B
SAF No.: B97-023
Document File No.: 1030596
BHI Document File No.: 411
SDG No.: LK8229



The attached data report contains the analytical results of samples that were submitted to Lockheed Analytical Services on October 30, 1996. The temperature of the cooler upon receipt was 2°C. Sample containers received agree with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements.

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data please call Mary Wolf at (702) 361-3955, extension 311. If you are unable to contact the client services representative, please call Mary B. Ford, client services manager, at extension 326.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Sincerely,

Mary K. Wolf
Client Services Representative

cc: Client Services
Document Control

000003

**CASE NARRATIVE
INORGANIC NON METALS ANALYSES**

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike (predigestion) sample(s), duplicate sample(s).

Preparation and Analysis Requirements

- One water sample was received for LK8229 and analyzed in batch 1030 bh for selected analytes to be analyzed in client-specified order as requested on the chain of custody. Quality control analysis was performed on the following samples:

Client ID	LAL #		Method
BOJCS9	L8229-3	DUP, MS	300.0 Nitrate-Nitrogen

Holding Time Requirements

- The sample was received and analyzed outside of the method-specific holding time. The associated sample is flagged with an "H".

Method Blanks

- The concentration levels of all the requested analytes in the method blank were below the reporting detection limits.

Internal Quality Control

- All Internal Quality Control were within acceptance limits.

Kay McCann
Prepared By

November 6, 1996
Date

000004

Lockheed Analytical Services

Log-in No.: L8229
Quotation No.: Q400000-B
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CASE NARRATIVE INORGANIC TOTAL URANIUM ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and matrix spike duplicate samples.

Preparation and Analysis Requirements

All samples were received on October 30, 1996. The samples were logged in as L8229 and were prepared and analyzed in batch 1029 bt.

Holding Time Requirements

All holding time requirements were met.

Total Uranium

The Total Uranium analysis was performed using LAL-91-SOP-0168. All samples were prepared in Workgroup U TOTAL KPA LAL-0168 43099 with a Method Blank (MBB1), Laboratory Control Sample (LCS1), Duplicate (DUP1) and Matrix Spike (MS1). No problems were encountered during preparation or analysis. All QC criteria were met and no reanalysis was performed.

Shellee McGrath
Prepared By

November 20, 1996
Date

000005

CASE NARRATIVE RADIOCHEMISTRY ANALYSES

The routine calibration and quality control (QC) analyses performed for this batch include as applicable: instrument calibration, initial and continuing calibration verification, quench monitoring standards, instrument background analysis, method blanks, yield tracer, laboratory control samples, matrix spike samples, and duplicate samples.

NOTE: Chemical recoveries and minimum detectable activities (MDAs) can be found on the preparation sheets and calculation sheets on the attached raw data for each method.

Holding Time Requirements

All holding time requirements were met.

Gas Proportional Counter

Analytical Method Strontium-90

The strontium-90 analysis was performed using standard operating procedure (SOP), LAL-91-SOP-0065. The samples were analyzed in workgroups 43149 and 43582. The samples in workgroup 43149 were re-analyzed in workgroup 43582 due to out-of-criteria laboratory control sample (LCS) and matrix spike (MS) recoveries. No analyses from workgroup 43149 were reported. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The duplicate (DUP) recoveries were within QC criteria. No other re-analyses were performed.

Liquid Scintillation Counter

Analytical Method Technetium-99

The technetium-99 analysis was performed using SOP, LAL-91-SOP-0169. The samples were analyzed in workgroup 43151. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

000005

Lockheed Analytical Services

Log-in No.: L8229
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Analytical Method Tritium

The tritium analysis was performed using SOP, LAL-91-SOP-0066. The samples were analyzed in workgroup 43158. The instrument calibration verification met criteria. The method blank was within QC criteria. The LCS and MS recoveries were within QC criteria. The DUP recoveries were within QC criteria. The quench value was within curve limitations. No re-analyses were performed.

Andrea Tippet
Prepared By

November 24, 1996
Date

000007

L8229

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						B97-023-S1		Page 1 of 1			
Collector <i>R. Fahlgren</i>		Company Contact Jane Borghese		Telephone No. (509) 373-4790		Project Coordinator Koerner, CC		Data Turnaround 45 Days					
Project Designation Pre-Startup Sampling for 100-HR-3 Interim Action Monitoring		Sampling Location 100 H and 100 D		SAF No. B97-023									
Ice Chest No. <i>96-068</i>		Field Logbook No. <i>EL-1289</i>		Method of Shipment Federal Express									
Shipped To Lockheed		Offsite Property No. <i>W97-0001-6</i>		Bill of Lading/Air Bill No. <i>2771634503</i>									
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	None	None	Cool 4C	HNO3 to pH <2	HCl to pH <2	HNO3 to pH <2					
		Type of Container	P	G	P	P	P	P					
		No. of Container(s)	1	1	1	1	4	4					
Special Handling and/or Storage Maintain samples between 2 degrees C and 6 degrees C		Volume	20ml	500ml	500ml	500ml	1000ml	1000ml					
SAMPLE ANALYSIS			Activity Scan	Tritium - H3	IC Anions - 300.0 (Nitrogen in Nitrate)	Total Uranium	Technetium-99	Strontium-89,90 - Total Sr					
Sample No.	Matrix *	Sample Date	Sample Time										
B0JCS9	Water	<i>10-28-96</i>	<i>1230</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>					
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS ** The ERC Contractor acknowledges the 48-hour holding time for nitrate is not likely achievable									
		Relinquished By	Date/Time									Received By	Date/Time
		<i>R. Fahlgren</i>	<i>10-28-96 1500</i>									<i>B. Whitte</i>	<i>10-28-96 1500</i>
		<i>R. Fahlgren</i>	<i>10-28-96 0900</i>									<i>B. Whitte</i>	<i>10-28-96 0900</i>
		<i>B. Whitte</i>	<i>10-28-96 0900</i>									<i>B. Whitte</i>	<i>10-28-96 0900</i>
Relinquished By	Date/Time	Received By	Date/Time										
Relinquished By	Date/Time	Received By	Date/Time										
Relinquished By	Date/Time	Received By	Date/Time										
LABORATORY SECTION		Received By		Title		Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time							

- Matrix ***
- S = Soil
 - SE = Sediment
 - SO = Solid
 - SL = Sludge
 - W = Water
 - O = Oil
 - A = Air
 - DS = Drum Solids
 - DL = Drum Liquids
 - T = Tissue
 - WI = Wipe
 - L = Liquid
 - V = Vegetation
 - X = Other

1030596

LOCKHEED ANALYTICAL SERVICES

Sample Results

Client Sample ID: BOJCS9	Date Collected: 28-OCT-96
Matrix: Water	Date Received: 30-OCT-96
Percent Solids: N/A	

Constituent	Units	Method	Result	Project Reporting Limit	Data Qualifier(s)	Date Analyzed	LAS Batch ID	LAS Sample ID
Nitrate-N	mg/L	300.0	1.5	0.020	H	31-OCT-96	43042	L8229-3

000021

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: BOJCS9
Date Collected: 28-OCT-96
Matrix: Water

Login Number: L8229
Date Received: 30-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analysed	Lab ID
Uranium	KPA	43099	5.72	0.30	0.69		ug/L	19-NOV-96	L8229-4

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA
Project Name: BECHTEL-HANFORD
Project Desc: Bechtel Hanford Project

Client Sample ID: BOJCS9
Date Collected: 28-OCT-96
Matrix: Water

Login Number: L8229
Date Received: 30-OCT-96

Constituent	Method	Batch	Activity	Error	NDA	Qualifier	Units	Analyzed	Lab ID
H-3	LAL-0066	43158	0	110	210		pCi/L	07-NOV-96	L8229-2

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: BOJCS9

Login Number: L8229

Date Collected: 28-OCT-96

Date Received: 30-OCT-96

Matrix: Water

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Tc-99	LAL-0169	43151	2.4	4.1	7.1		pCi/L	19-NOV-96	L8229-5

LOCKHEED ANALYTICAL SERVICES

RADIOCHEMISTRY DATA REPORT

Account Name: Bechtel Hanford, Inc. * Richland, WA

Project Name: BECHTEL-HANFORD

Project Desc: Bechtel Hanford Project

Client Sample ID: BOJCS9

Date Collected: 28-OCT-96

Matrix: Water

Login Number: L8229

Date Received: 30-OCT-96

Constituent	Method	Batch	Activity	Error	MDA	Qualifier	Units	Analyzed	Lab ID
Sr-89,90	LAL-0065	43582	-0.02	0.32	0.57		pCi/L	19-NOV-96	L8229-9